

REMARKS/ARGUMENTS

Applicants have cancelled Claim 40, and thus the rejections of Claim 40 are now moot. Applicants respectfully request reconsideration of pending Claims 21-39 in view of the following remarks.

CLAIM REJECTIONS – 35 U.S.C. § 102

Independent Claim 21

Claim 21 stands rejected under 35 U.S.C. § 102(a) as being anticipated by United States Patent No. 5,855,718 issued to Nguyen et al. (“Nguyen”). Claim 21 specifies “a second one-piece build style lattice integrally formed with and interlaced with the first lattice.”

Nguyen discloses building a discontinuous hatch structure 10 (as shown in Figure 1g) including each of the six levels shown in Figures 1a-1f. The levels include a first level 12 having a first pattern 14, a second level 16 having a second pattern 18, a third level 20 having a third pattern 22, a fourth level 24 having a fourth pattern 26, a fifth level 28 having a fifth pattern 30, and a sixth level 32 having a sixth pattern 34. The second pattern 18 includes at least a portion of the first pattern 14 and at least a portion of the third pattern 22. *Nguyen*, col. 7, line 56 to col. 8, line 6 and Figures 1a-1f. The second pattern 18 is an intermediate or bridging pattern, because the second pattern 18 is composed of at least a portion of the first pattern 14 of the previous first level 12 and at least a portion of the third pattern 22 of the subsequent third level 20. *Id.* at col. 8, lines 7-11. Similarly, the fourth pattern 26 and the sixth pattern 34 are also bridging patterns.

As the Examiner has indicated on page 2 of the Office Action, if the second pattern 18 is the “first one-piece build style lattice” of Claim 21 and the fourth pattern 26 or the sixth pattern 34 is the “second one-piece build style lattice” of Claim 21, neither the fourth pattern 26 nor the sixth pattern 34 is integrally formed with and interlaced with the second pattern 18. The first level 12, the second level 16, the third level 20, the fourth level 24, the fifth level 28, and the sixth level 32 of Nguyen are each completely separate physical structures that stack on top of each other to form the hatch structure 10. Nguyen does not disclose that the first level 12, the second

level 16, the third level 20, the fourth level 24, the fifth level 28, or the sixth level 32 are in any way integrally formed or interlaced with each other. In other words, none of the physical legs of the hexagonal structure shown in Figures 1a-1f are integrally formed or interlaced so that they cannot be removed from one another by removing an upper level from a lower level. Accordingly, Nguyen does not disclose “a second one-piece build style lattice integrally formed with and interlaced with the first lattice,” as specified by Claim 21. Thus, independent Claim 21 and dependent Claims 22-39 are allowable over Nguyen.

Claim 21 also stands rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 4,020,205 issued to Haselbauer (“Haselbauer”).

Haselbauer discloses a first strip 10 (as shown in Figure 2) bent to create dihedral angles and a second strip 12 (as shown in Figure 3) conversely bent to create dihedral angles. *Haselbauer*, col. 2, lines 48-55 and col. 3, lines 8-14. A two-element truss or structural core medium can be formed by abutting the first strip 10 and the second strip 12 to join the dihedral angles. *Id.* at col. 3, lines 17-22. As shown in Figure 5, the first strip 10 can be slid against the second strip 12 to form alternately offset open-faced tetrahedrons 14. *Id.* at col. 3, lines 22-27. As shown in Figure 6, the first strip 10 can be moved to the opposite side of the second strip 12 to form open-ended octahedrons 20. *Id.* at col. 3, lines 38-44.

As the Examiner has indicated on page 5 of the Office Action, if the first strip 10 is the “first one-piece build style lattice” of Claim 21 and the second strip 12 is the “second one-piece build style lattice” of Claim 21, the second strip 12 is not integrally formed with and interlaced with the first strip 10. The elemental trusses shown in Figures 5 and 6 of Haselbauer are formed from two physically separate first and second strips 10 and 12. Several pairs of the first and second strips 10 and 12 are moved into the contours of one another to form a larger object, as shown in Figure 7. However, the first and second strips 10 and 12 are not integrally formed or interlaced with one another, but rather are slid on top of each other and then pushed together so that they can be removed from one another.

Accordingly, Haselbauer does not disclose “a second one-piece build style lattice integrally formed with and interlaced with the first lattice,” as specified by Claim 21. Therefore, independent Claim 21 and dependent Claims 22-39 are allowable over Haselbauer.

Dependent Claims 22-39

Claims 22-24 and 28-39 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Nguyen. Claims 22-24 and 28-39 depend from Claim 21 and are therefore allowable for the reasons discussed with respect to Claim 21. Claims 22-24 and 28-39 also specify additional patentable subject matter not specifically discussed herein.

Claims 22-24, 28, 29, 35-37, and 39 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Haselbauer. Claims 22-24, 28, 29, 35-37, and 39 depend from Claim 21 and are therefore allowable for the reasons discussed with respect to Claim 21. Claims 22-24, 28, 29, 35-37, and 39 also specify additional patentable subject matter not specifically discussed herein.

CLAIM REJECTIONS – 35 U.S.C. § 103

Dependent Claims 25-27

Claims 25-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either Nguyen or Haselbauer. Claims 25-27 depend from Claim 21, and are therefore allowable for the reasons set forth above with respect to Claim 21. Claims 25-27 specify additional patentable subject matter not specifically discussed herein. Applicants respectfully traverse the Examiner’s statements on page 7 of the Office Action regarding modifying the thickness of the legs and nodes of the lattice.

therefore believed to be novel and to include an inventive step based upon Claim 1 and upon other features and elements claimed in Claims 2, 9, 11-12, and 14 but not discussed herein.

Dependent Claims 3-5 and 10

In Section V.2. of the Written Opinion, Claims 3-5 and 10 are objected to as lacking inventive step under PCT Article 33(3) in light of Chang. Claims 3-5 and 10 depend from Claim 1. Claims 3-5 and 10 are therefore believed to include an inventive step based upon Claim 1 and upon other features and elements claimed in Claims 3-5 and 10 but not discussed herein.

Dependent Claims 6-8, 13, and 15-20

In Box No. II of the International Search Report, the Authorized Officer indicates that dependent Claims 6-8, 13, and 16-20 were not found in the prior art. In Section V.2. of the Written Opinion, the Authorized Officer indicates that dependent Claim 15 meets the criteria set out in PCT Article 33(2)-33(3) and that the subject matter of Claims 6 and 16-20 is not disclosed or rendered obvious by the prior art. Accordingly, Applicant respectfully submits that Claims 6-8, 13, and 15-20 are therefore novel under PCT Article 33(2) and include an inventive step under PCT Article 33(3).

CONCLUSION

In view of the above amendments and remarks, Applicant respectfully submits that the claims are patentably distinct over the prior art. Applicant respectfully requests a favorable International Preliminary Examination Report.

Respectfully submitted,

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